Commonwealth of Kentucky
Division for Air Quality

PERMIT APPLICATION SUMMARY FORM

Completed by: Ali Imam and Carolina Alonso

GENERAL INFORMATION:

Name:	Martek Biosciences Corporation	
Address:	555 Rolling Hills Lane, Winchester, KY 40391	
Date application received:	log # 54317	Feb 15, 2002
	log # 55762	May 21, 2003
SIC/Source description:	2076	
EIS #:	21-049-00032	
Application log number:	54317 and 55762	
Permit number:	V-00-010 (Revision 1)	

APPLICATION TYPE/PERMIT ACTIVITY:

[ ] Initial issuance
[X] Permit modification
__Administrative
__Minor
[X]Significant
[ ] Permit renewal
[ ] General permit
[ ] Conditional major
[X] Title V
[ ] Synthetic minor
[ ] Operating
[X] Construction/operating

COMPLIANCE SUMMARY:

[ ] Source is out of compliance
[ ] Compliance certification signed
[ ] Compliance schedule included

APPLICABLE REQUIREMENTS LIST:

[ ] NSR
[ ] PSD
[ ] Netted out of PSD/NSR
[X] NSPS
[ ] NESHAPS
[ ] Not major modification per 401 KAR 51:017, 1(23)(b) or 51:052,1(14)(b)
[X] SIP
[ ] Other

MISCELLANEOUS:

[ ] Acid rain source
[ ] Source subject to 112(r)
[ ] Source applied for federally enforceable emissions cap
[ ] Source provided terms for alternative operating scenarios
[ ] Source subject to a MACT standard
[ ] Source requested case-by-case 112(g) or (j) determination
[ ] Application proposes new control technology
[X] Certified by responsible official
[ ] Diagrams or drawings included
[ ] Confidential business information (CBI) submitted in application
[ ] Pollution Prevention Measures
[ ] Area is non-attainment (list pollutants):

EMISSIONS SUMMARY:
Log Numbers: 54317 and 55762

Pollutant	Actual (tpy)	Potential (tpy)
PM	13.7	30.0
SO_2	0.3	0.4
NOx	56.3	71.9
CO	47.3	60.4
VOC	9.5	24.2
LEAD	0.0	0.0
HAPS (Hexane)	7.4	20.5

Facility Total: Winchester Plant # 1 and # 2

Pollutant	Actual (tpy)	Potential (tpy)
PM	15.0	41.1
SO_2	0.4	0.5
NOx	60.8	85.3
CO	51.0	71.6
VOC	111.7	244.5
LEAD	0.0	0.0
HAPS (Hexane)	43.2	77.6

SOURCE PROCESS DESCRIPTION:

The Martek Biosciences facility in Winchester produces two single cell oils, each of which is enriched in a specific fatty acid. One is a triglyceride oil enriched in DHA (docosahexaenoic acid) derived from a marine microalgae (DHASCO®) and the second is a triglyceride oil enriched in ARA (arachidonic acid) derived from a common soil organism (ARASCO®). The process begins when a biomass is produced through cultivation of a starter seed culture, particular to the oil to be produced, in a series of increasingly larger fermentors. After the final fermentation, in the case of the marine algae, the biomass is spray dried. The ARASCO® biomass must be dried through other means at a toll processing facility. The oil is extracted from the dried biomass using a hexane extraction process. The oil is winterized, refined, bleached, and deodorized to produce the final product.

Martek Biosciences Corporation plans to construct Winchester Plant # 2. It will include the same processes at their existing facility with the exception of extraction. There is excess extraction capacity at Winchester Plant # 1.